Patent claims

1. Formulations without chaotropic components for isolating nucleic acids with binding to a solid phase, in particular of DNA, from optional complex starting materials containing
   - a lysis/binding buffer system which contains at least one antichaotropic salt component,
   - a solid phase,
   - wash and elution buffers known as such.

2. Formulations according to claim 1 wherein
the antichaotropic component is an ammonium, caesium, sodium and/or potassium salt, ~~preferably ammonium chloride~~.

3. Formulations according to claims 1 or 2 wherein
the lysis/binding buffer system contains detergents and additives, if necessary.

4. Formulations according to claim 3, wherein
detergents and additives are tris-HCl, EDTA, polyvinyl pyrrolidone, CTAB, tritonX-100, n-lauryl sarcosine, sodium citrate, DTT, SDS and/or Tween.

5. Formulations according to ~~claims 1 to 4~~ claim 1, wherein
the lysis/binding buffer system contains an alcohol for binding to the solid phase.

6. Formulations according to claims 1 to 5 wherein
the lysis/binding buffer system contains enzymes, preferably degrading proteins degrading enzymes.

7. Formulations according to ~~claims 1 to 6~~ claim 1, wherein the lysis/binding buffer system is an aqueous solution.

8. Formulations according to ~~claims 1 to 6~~ claim 1, wherein the lysis/binding buffer system is a solid formulation stable in storage in reaction vessels ready for use.

9. Formulations according to claims 1 to 8 wherein all carriers serve as a solid phase which were used for isolation by means of chaotropic reagents, preferably glass fiber mats, glass membranes, glasses, zeolites, ceramics, silica carriers.

10. Formulations according to ~~claims 1 to 8~~ claim 1, wherein all carriers which have a negatively functionalised surface or functionalised surfaces which may be converted to a negative charge potential serve as solid phase.

11. Formulations according to claim 10 wherein the surface of the carrier is modified by an acetyl group, carboxyl group or hydroxyl group.

12. Method for isolating nucleic acids, in particular DNA, from optional complex starting materials using formulations according to one of the claims 1 to 9 wherein the starting material is lysed, nucleic acids are bound to a solid phase, the nucleic acids bound to the carrier are washed and an elution of the nucleic acids is effected.

13. Method for isolating nucleic acids according to claim 12 wherein the material containing DNA

- with a lysis/binding buffer system comprising an aqueous solution which contains an antichaotropic salt component, contains at least a detergent, and if necessary, additives, and if necessary, a proteolytic enzyme and
- is brought into contact with a solid phase, if necessary, with adding alcohol
- is washed subsequently and the nucleic acid is dissolved from the solid phase.

14. Method according to claim 13 wherein starting materials are compact plant materials such as fruit; seeds; leaves; needles etc. clinically relevant samples such as whole

blood; tissue; microbioptate, paraffine-coated materials, ercp-samples, swabs, foodstuffs such as fish, sausage, tins, milk, forensic samples such as hair roots, cigarette butts, blood stains and other samples containing DNA.

15. Method according to one of the claims 12 to 14 wherein the ionic strength of the antichaotropic salts for lysis/binding is between 0.1 and 8 M.

16. Method for isolating nucleic acids, in particular DNA, from optional complex starting materials with using formulations according to one of the claims 1 to 8 and 10 to 11 wherein

- the starting material is in a "single tube" or one step method chemically modified, brought into contact and lysed with a negatively functionalised surface or its surface in a way that it may be converted to a negative charge potential,
- the binding of the nucleic acid to the surface is effected,
- the bound nucleic acid is washed and, if necessary, eluted.

17. Method according to claim 16, wherein negatively functionalised surfaces are accordingly modified planar surfaces, filter membranes, traditional plastic vessels or microtest plates.

18. Method according to claims 16 and 17 wherein the nucleic acid is subsequently subjected to an amplification reaction of selected sequence sections in the same reaction batch and, if necessary, thereupon the gene sequences are analysed.

19. Method according to ~~claims 16 and 17~~ Claim 16 wherein nucleic acid is subsequently hybridised and/or sequenced in the same reaction batch.

20. Use of antichaotropic components in a lysis/binding buffer system for isolating and purifying nucleic acids with binding to a solid phase.

21. Use according to claim 20 wherein antichaotropic components are ammonium, caesium, sodium and/or potassium salts, preferably ammonium chloride.

22. Use according to claims 20 or 21 wherein antichaotropic salts in an ionic strength between 0.1 and 8 M are used for lysis/binding.

23. Use according to one of the claims 20 to 22 wherein the lysis/binding buffer system is used as an aqueous solution.

24. Use according to one of the claims 20 to 22 wherein the lysis/binding buffer system is present as a stable formulation stable in storage.

25. Use according to one of the claims 20 to 24 for the preparative isolation and purification of DNA for use in gene therapy.